Figure 1A.

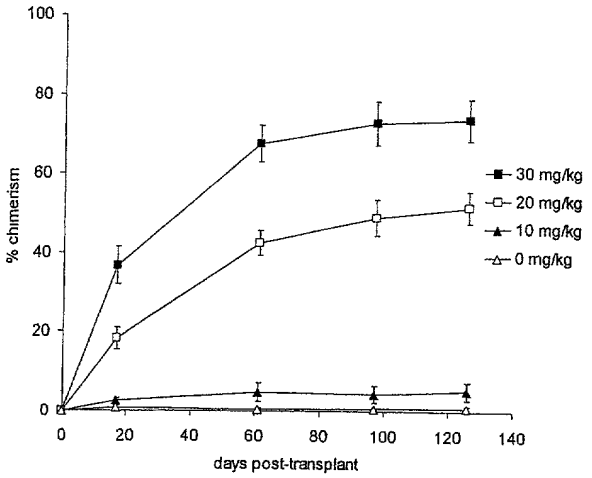


Figure 1B.

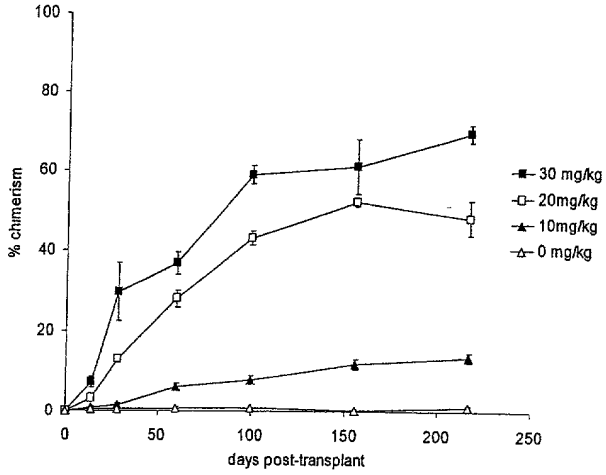


Figure 1C.

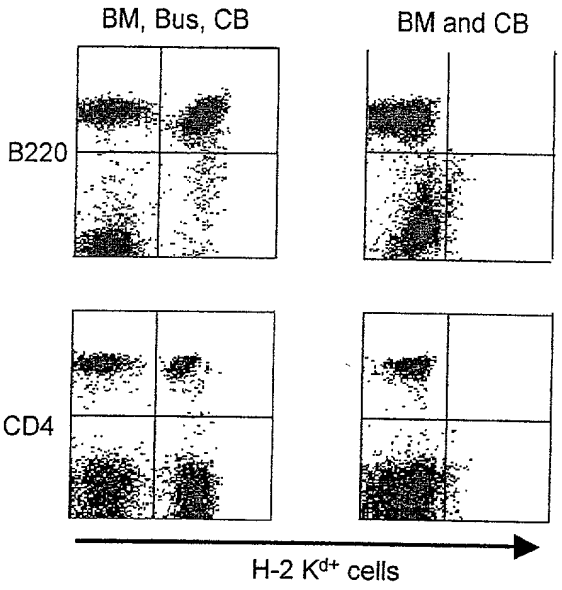


Figure 1D.

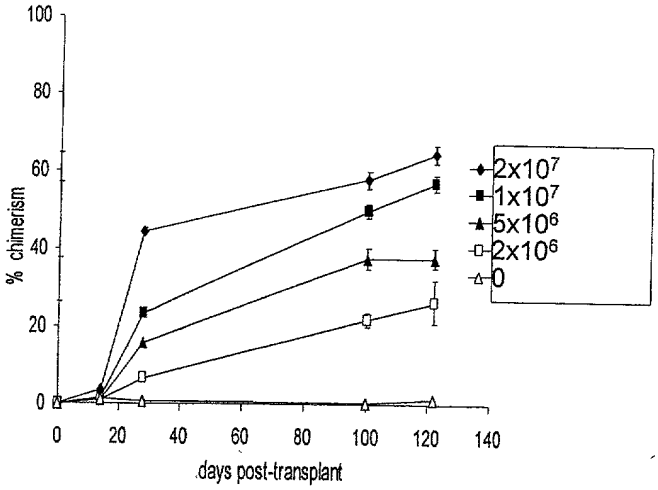


Figure 2

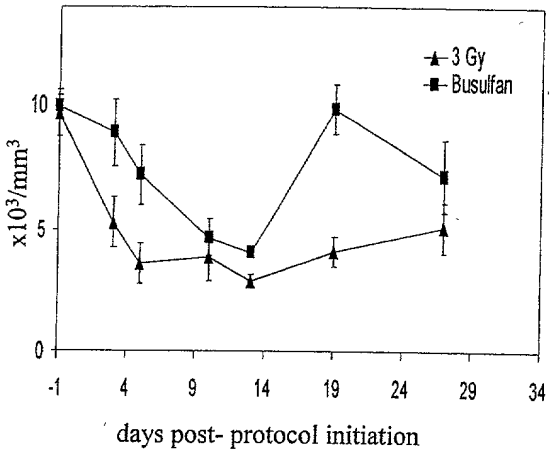

3 Gy
Busulfan
10
5
0
x10³/mm³
-1
4
9
14
19
24
29
34
days post- protocol initiation

Figure 3A.

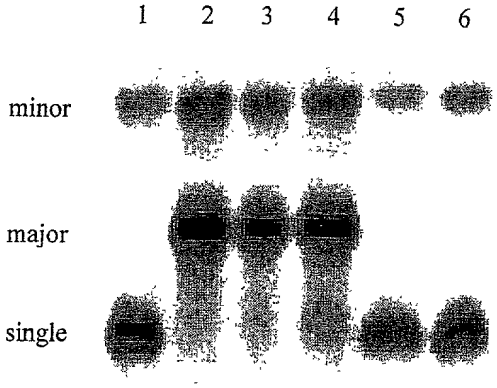


Figure 3B.

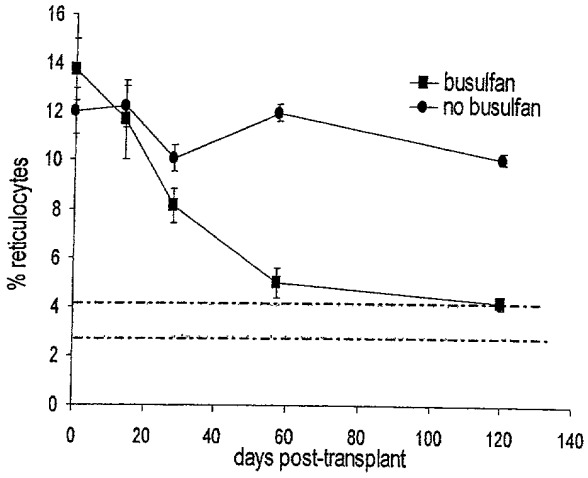


Figure 4A.

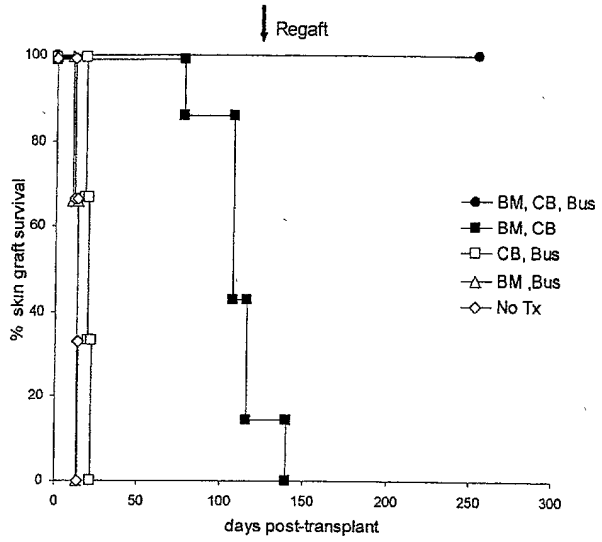


Figure 4B.

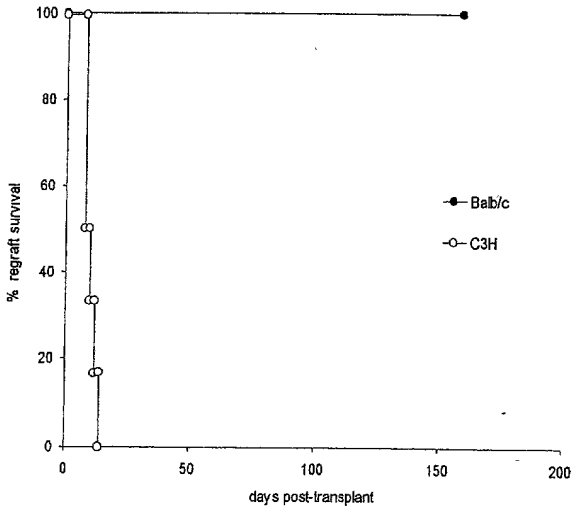


Figure 5A.

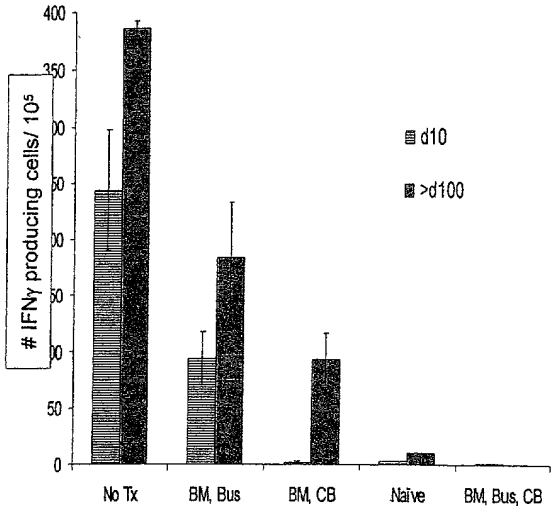


Figure 5B.

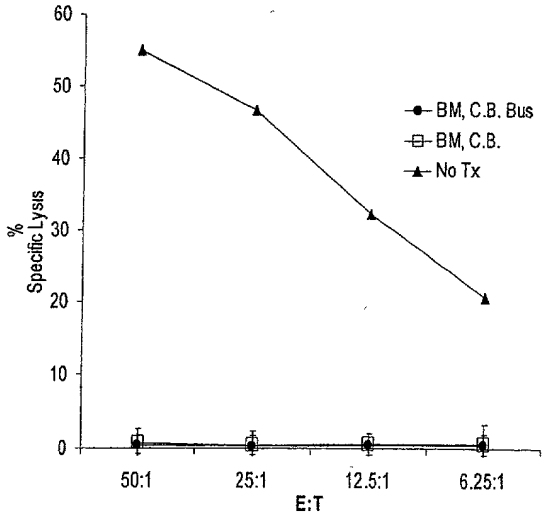


Figure 5C.

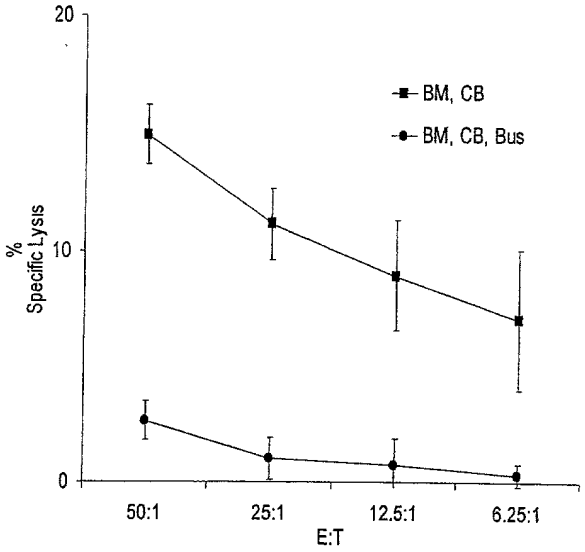


Figure 5D.

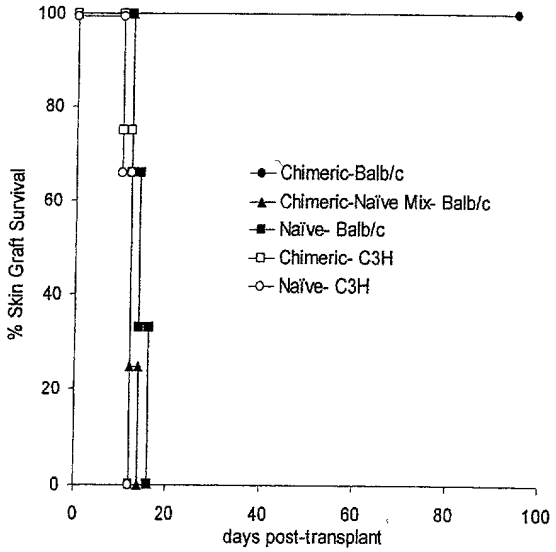


Figure 6A.

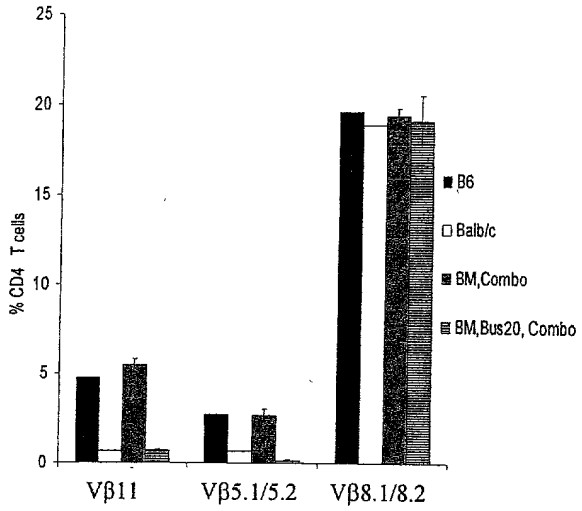


Figure 6B.

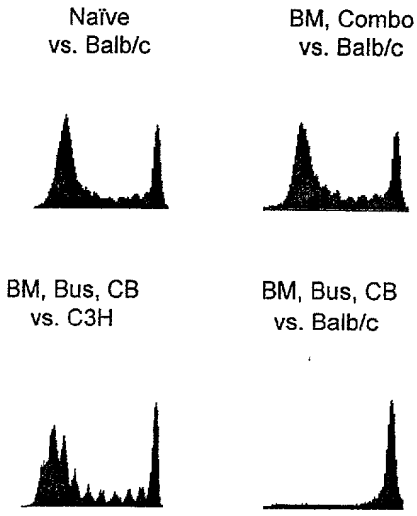


Figure 7a

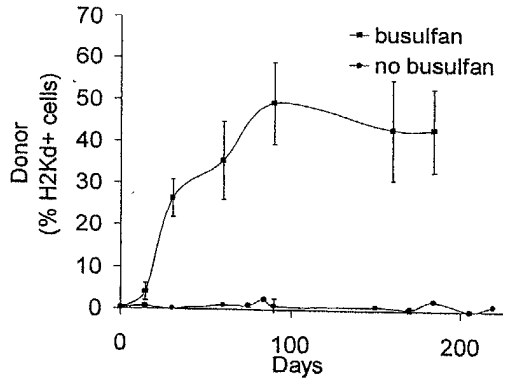
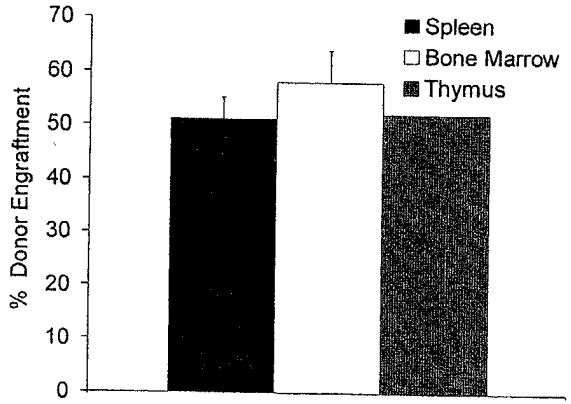


Figure 7b



20520 9824501

Figure 8

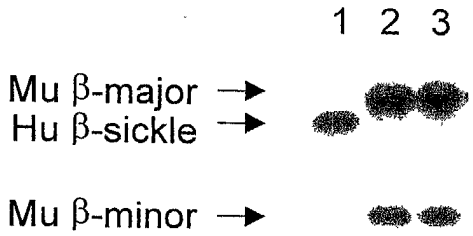


Figure 9

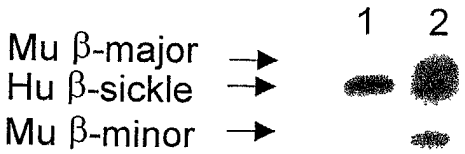
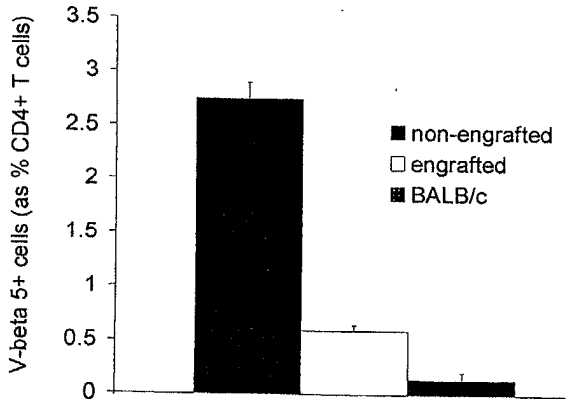


Figure 10a


V-beta 5+ cells (as % CD4+ T cells)
3.5
3
2.5
2
1.5
1
0.5
0
non-engrafted
engrafted
BALB/c

2052107 882/5001

Figure 10b

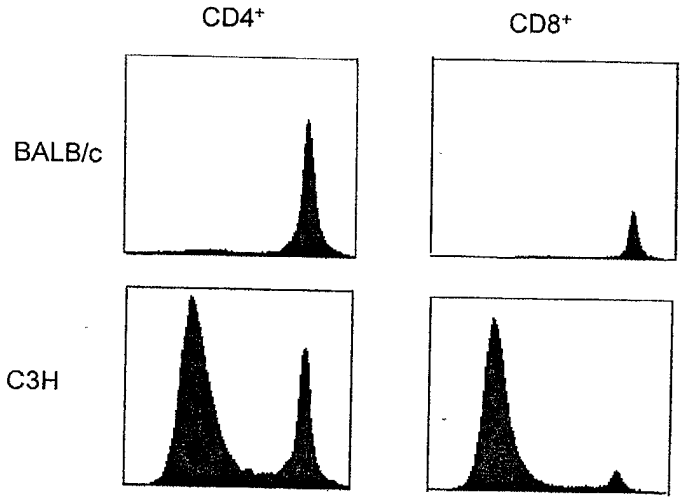
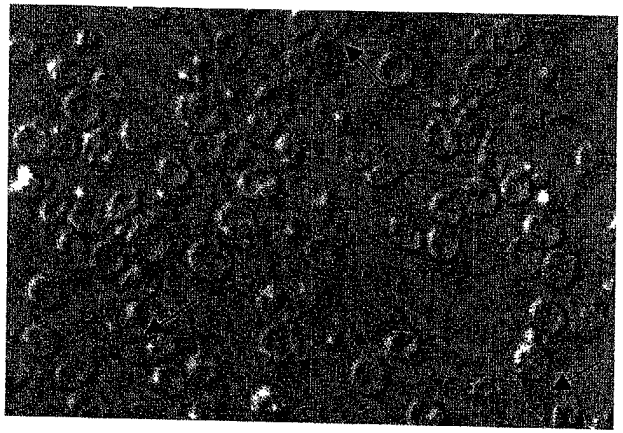


Figure 11

a.



b.

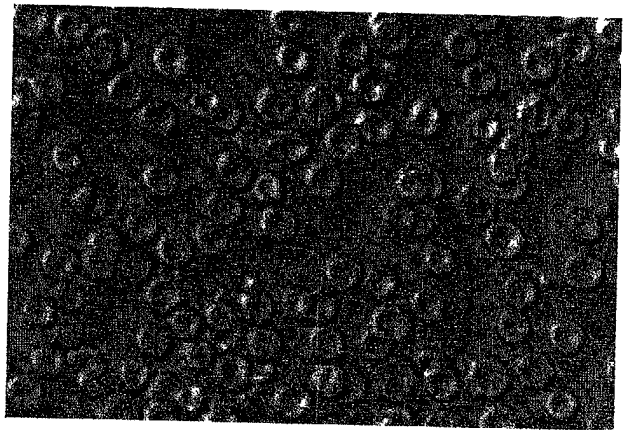


Figure 11c

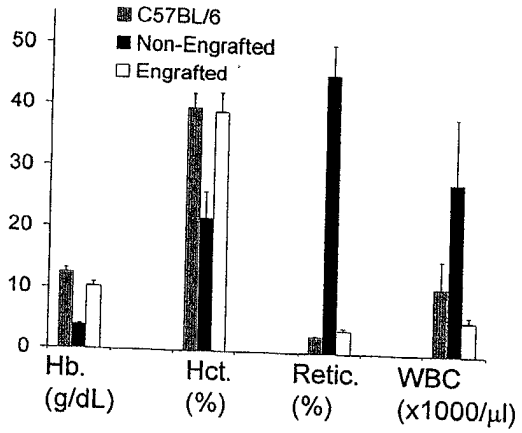


Figure 11d

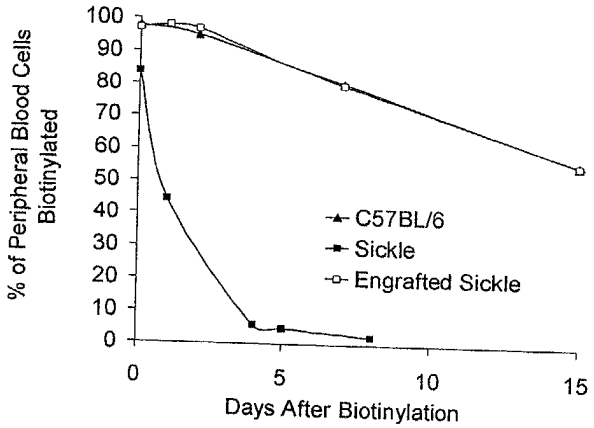


Figure11e

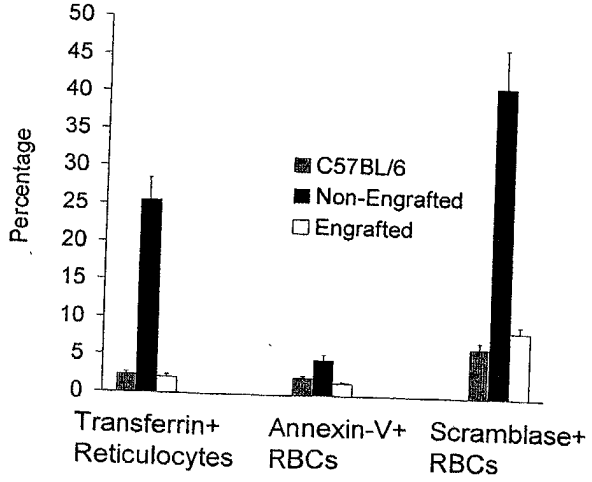


Figure 12a

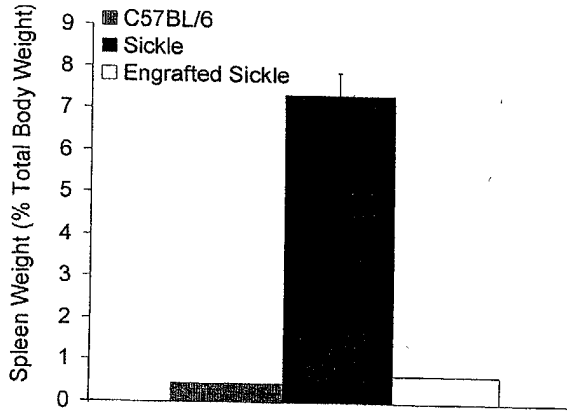
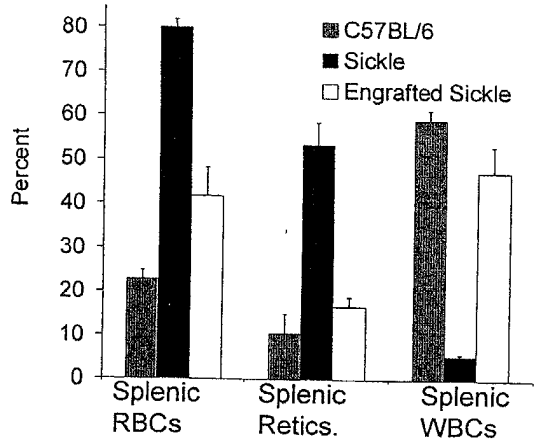


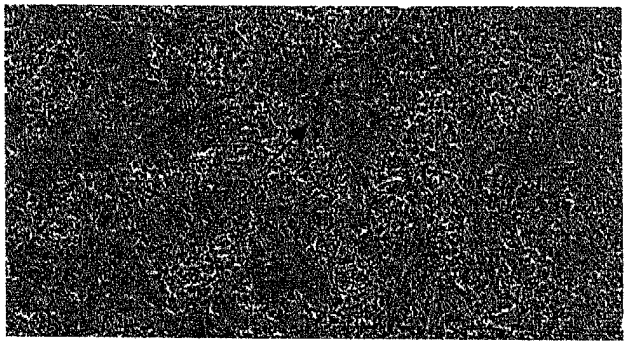
Figure 12b



20520-8827S001

Figure 12

c.



d.

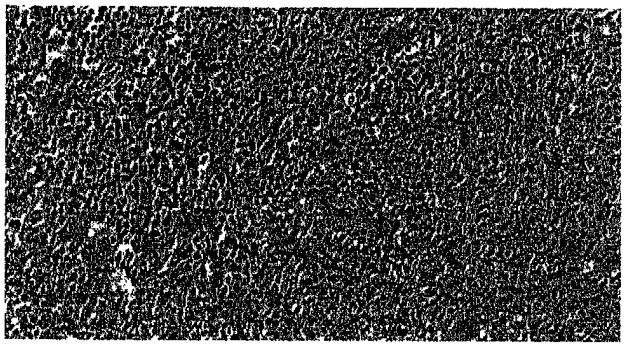


Figure 13

a.

b.

```
ATGGGTGTACTGCTCACACAGAGGACGCTGCTCAGTCTGGTCCTTGCACTCCTGTTTCCA      -19
M~~G~~V~~L~~L~~T~~Q~~R~~T~~L~~L~~S~~L~~V~~L~~A~~L~~L~~F~~P~~      -7

AGCATGGCGAGCATGGCAATGCACGTGGCCCAGCCTGCTGTGGTACTGGCCAGCAGCCGA      +42
S~~M~~A~~S~~M~~A~~M~~H~~V~~A~~Q~~P~~A~~V~~V~~L~~A~~S~~S~~R~~      +14
                  +1

GGCATCGCTAGCTTTGTGTGTGAGTATGCATCTCCAGGCAAAGCCACTGAGGTCCGGGTG      +102
G~~I~~A~~S~~F~~V~~C~~E~~Y~~A~~S~~P~~G~~K~~A~~T~~E~~V~~R~~V~~      +34

ACAGTGCTTCGGCAGGCTGACAGCCAGGTGACTGAAGTCTGTGCGGCAACCTACATGATG      +162
T~~V~~L~~R~~Q~~A~~D~~S~~Q~~V~~T~~E~~V~~C~~A~~A~~T~~Y~~M~~M~~      +54

GGGAATGAGTTGACCTTCCTAGATGATTCCATCTGCACGGGCACCTCCAGTGGAAATCAA      +222
G~~N~~E~~L~~T~~F~~L~~D~~D~~S~~I~~C~~T~~G~~T~~S~~S~~G~~N~~Q~~      +74

GTGAACCTCACTATCCAAGGACTGAGGGCCATGGACACGGGACTCTACATCTGCAAGGTG      +282
V~~N~~L~~T~~I~~Q~~G~~L~~R~~A~~M~~D~~T~~G~~L~~Y~~I~~C~~K~~V~~      +94

GAGCTCATGTACCCACCGCCATACTACGAGGGCATAGGCAACGGAACCCAGATTTATGTA      +342
E~~L~~M~~Y~~P~~P~~P~~Y~~Y~~E~~G~~I~~G~~N~~G~~T~~Q~~I~~Y~~V~~      +114

ATTGATCCAGAACCGTGCCCAGATTCTGATCAGGAGCCCAAATCTTCTGACAAAACTCAC      +402
I~~D~~P~~E~~P~~C~~P~~D~~S~~D~~Q~~E~~P~~K~~S~~S~~D~~K~~T~~H~~      +134

ACATCCCCACCGTCCCCAGCACCTGAACTCCTGGGGGGGATCGTCAGTCTTCCTCTTCCCC      +462
T~~S~~P~~P~~S~~P~~A~~P~~E~~L~~L~~G~~G~~S~~S~~V~~F~~L~~F~~P~~      +154

CCAAAACCCAAGGACACCCTCATGATCTCCCGGACCCCTGAGGTCACATGCGTGGTGGTG      +522
P~~K~~P~~K~~D~~T~~L~~M~~I~~S~~R~~T~~P~~E~~V~~T~~C~~V~~V~~V~~      +174

GACGTGAGCCACGAAGACCCTGAGGTCAAGTTCAACTGGTACGTGGACGGCGTGGAGGTG      +582
D~~V~~S~~H~~E~~D~~P~~E~~V~~K~~F~~N~~W~~Y~~V~~D~~G~~V~~E~~V~~      +194

CATAATGCCAAGACAAAGCCGCGGGAGGAGCAGTACAACAGCACGTACCGTGTGGTCAGC      +642
H~~N~~A~~K~~T~~K~~P~~R~~E~~E~~Q~~Y~~N~~S~~T~~Y~~R~~V~~V~~S~~      +214

GTCCTCACCGTCCTGCACCAGGACTGGCTGAATGGCAAGGAGTACAAGTGCAAGGTCTCC      +702
V~~L~~T~~V~~L~~H~~Q~~D~~W~~L~~N~~G~~K~~E~~Y~~K~~C~~K~~V~~S~~      +234

AACAAAGCCCTCCCAGCCCCCATCGAGAAAACCATCTCCAAAGCCAAAGGGCAGCCCCGA      +762
N~~K~~A~~L~~P~~A~~P~~I~~E~~K~~T~~I~~S~~K~~A~~K~~G~~Q~~P~~R~~      +254

GAACCACAGGTGTACACCCTGCCCCCATCCCGGGATGAGCTGACCAAGAACCAGGTCAGC      +822
E~~P~~Q~~V~~Y~~T~~L~~P~~P~~S~~R~~D~~E~~L~~T~~K~~N~~Q~~V~~S~~      +274

CTGACCTGCCTGGTCAAAGGCTTCTATCCCAGCGACATCGCCGTGGAGTGGGAGAGCAAT      +882
L~~T~~C~~L~~V~~K~~G~~F~~Y~~P~~S~~D~~I~~A~~V~~E~~W~~E~~S~~N~~      +294

GGGCAGCCGGAGAACAACTACAAGACCACGCCTCCCGTGCTGGACTCCGACGGCTCCTTC      +942
G~~Q~~P~~E~~N~~N~~Y~~K~~T~~T~~P~~P~~V~~L~~D~~S~~D~~G~~S~~F~~      +314

TTCCTCTACAGCAAGCTCACCGTGGACAAGAGCAGGTGGCAGCAGGGGAACGTCTTCTCA      +1002
F~~L~~Y~~S~~K~~L~~T~~V~~D~~K~~S~~R~~W~~Q~~Q~~G~~N~~V~~F~~S~~      +334

TGCTCCGTGATGCATGAGGCTCTGCACAACCACTACACGCAGAAGAGCCTCTCCCTGTCT      +1062
C~~S~~V~~M~~H~~E~~A~~L~~H~~N~~H~~Y~~T~~Q~~K~~S~~L~~S~~L~~S~~      +354

CCGGGTAAATGA
P~~G~~K~~*
```

FIG. 14

5,866,342

```
ATGGGTGTACTGCTCACACAGAGGACGCTGCTCAGTCTGGTCCTTGCACTCCTGTTTCCA      -19
M~~G~~V~~L~~L~~T~~Q~~R~~T~~L~~L~~S~~L~~V~~L~~A~~L~~L~~F~~P~~      -7

AGCATGGCGAGCATGGCAATGCACGTGGCCCAGCCTGCTGTGGTACTGGCCAGCAGCCGA      +42
S~~M~~A~~S~~M~~A~~M~~H~~V~~A~~Q~~P~~A~~V~~V~~L~~A~~S~~S~~R~~      +14
                  +1

GGCATCGCTAGCTTTGTGTGTGAGTATGCATCTCCAGGCAAATATACTGAGGTCCGGGTG      +102
G~~I~~A~~S~~F~~V~~C~~E~~Y~~A~~S~~P~~G~~K~~Y~~T~~E~~V~~R~~V~~      +34

ACAGTGCTTCGGCAGGCTGACAGCCAGGTGACTGAAGTCTGTGCGGCAACCTACATGATG      +162
T~~V~~L~~R~~Q~~A~~D~~S~~Q~~V~~T~~E~~V~~C~~A~~A~~T~~Y~~M~~M~~      +54

GGGAATGAGTTGACCTTCCTAGATGATTCCATCTGCACGGGCACCTCCAGTGGAAATCAA      +222
G~~N~~E~~L~~T~~F~~L~~D~~D~~S~~I~~C~~T~~G~~T~~S~~S~~G~~N~~Q~~      +74

GTGAACCTCACTATCCAAGGACTGAGGGCCATGGACACGGGACTCTACATCTGCAAGGTG      +282
V~~N~~L~~T~~I~~Q~~G~~L~~R~~A~~M~~D~~T~~G~~L~~Y~~I~~C~~K~~V~~      +94

GAGCTCATGTACCCACCGCCATACTACGAGGGCATAGGCAACGGAACCCAGATTTATGTA      +342
E~~L~~M~~Y~~P~~P~~P~~Y~~Y~~E~~G~~I~~G~~N~~G~~T~~Q~~I~~Y~~V~~      +114

ATTGATCCAGAACCGTGCCCAGATTCTGATCAGGAGCCCAAATCTTCTGACAAAACTCAC      +402
I~~D~~P~~E~~P~~C~~P~~D~~S~~D~~Q~~E~~P~~K~~S~~S~~D~~K~~T~~H~~      +134

ACATCCCCACCGTCCCCAGCACCTGAACTCCTGGGGGGATCGTCAGTCTTCCTCTTCCCC      +462
T~~S~~P~~P~~S~~P~~A~~P~~E~~L~~L~~G~~G~~S~~S~~V~~F~~L~~F~~P~~      +154

CCAAAACCCAAGGACACCCTCATGATCTCCCGGACCCCTGAGGTCACATGCGTGGTGGTG      +522
P~~K~~P~~K~~D~~T~~L~~M~~I~~S~~R~~T~~P~~E~~V~~T~~C~~V~~V~~V~~      +174

GACGTGAGCCACGAAGACCCTGAGGTCAAGTTCAACTGGTACGTGGACGGCGTGGAGGTG      +582
D~~V~~S~~H~~E~~D~~P~~E~~V~~K~~F~~N~~W~~Y~~V~~D~~G~~V~~E~~V~~      +194

CATAATGCCAAGACAAAGCCGCGGGAGGAGCAGTACAACAGCACGTACCGTGTGGTCAGC      +642
H~~N~~A~~K~~T~~K~~P~~R~~E~~E~~Q~~Y~~N~~S~~T~~Y~~R~~V~~V~~S~~      +214

GTCCTCACCGTCCTGCACCAGGACTGGCTGAATGGCAAGGAGTACAAGTGCAAGGTCTCC      +702
V~~L~~T~~V~~L~~H~~Q~~D~~W~~L~~N~~G~~K~~E~~Y~~K~~C~~K~~V~~S~~      +234

AACAAAGCCCTCCCAGCCCCCATCGAGAAAACCATCTCCAAAGCCAAAGGGCAGCCCCGA      +762
N~~K~~A~~L~~P~~A~~P~~I~~E~~K~~T~~I~~S~~K~~A~~K~~G~~Q~~P~~R~~      +254

GAACCACAGGTGTACACCCTGCCCCCATCCCGGGATGAGCTGACCAAGAACCAGGTCAGC      +822
E~~P~~Q~~V~~Y~~T~~L~~P~~P~~S~~R~~D~~E~~L~~T~~K~~N~~Q~~V~~S~~      +274

CTGACCTGCCTGGTCAAAGGCTTCTATCCCAGCGACATCGCCGTGGAGTGGGAGAGCAAT      +882
L~~T~~C~~L~~V~~K~~G~~F~~Y~~P~~S~~D~~I~~A~~V~~E~~W~~E~~S~~N~~      +294

GGGCAGCCGGAGAACAACTACAAGACCACGCCTCCCGTGCTGGACTCCGACGGCTCCTTC      +942
G~~Q~~P~~E~~N~~N~~Y~~K~~T~~T~~P~~P~~V~~L~~D~~S~~D~~G~~S~~F~~      +314

TTCCTCTACAGCAAGCTCACCGTGGACAAGAGCAGGTGGCAGCAGGGGAACGTCTTCTCA      +1002
F~~L~~Y~~S~~K~~L~~T~~V~~D~~K~~S~~R~~W~~Q~~Q~~G~~N~~V~~F~~S~~      +334

TGCTCCGTGATGCATGAGGCTCTGCACAACCACTACACGCAGAAGAGCCTCTCCCTGTCT      +1062
C~~S~~V~~M~~H~~E~~A~~L~~H~~N~~H~~Y~~T~~Q~~K~~S~~L~~S~~L~~S~~      +354

CCGGGTAAATGA
P~~G~~K~~*
```

FIG. 15

5,656,465

EP 0 555 750 A1

```
ATGGGTGTACTGCTCACACAGAGGACGCTGCTCAGTCTGGTCCTTGCACTCCTGTTTCCA
M~~G~~V~~L~~L~~T~~Q~~R~~T~~L~~L~~S~~L~~V~~L~~A~~L~~L~~F~~P~~

AGCATGGCGAGCATGGCAATGCACGTGGCCCAGCCTGCTGTGGTACTGGCCAGCAGCCGA
S~~M~~A~~S~~M~~A~~M~~H~~V~~A~~Q~~P~~A~~V~~V~~L~~A~~S~~S~~R~~
                +I

GGCATCGCTAGCTTTGTGTGTGAGTATGCATCTCCAGGCAAATTGACTGAGGTCCGGGTG
G~~I~~A~~S~~F~~V~~C~~E~~Y~~A~~S~~P~~G~~K~~L~~T~~E~~V~~R~~V~~

ACAGTGCTTCGGCAGGCTGACAGCCAGGTGACTGAAGTCTGTGCGGCAACCTACATGATG
T~~V~~L~~R~~Q~~A~~D~~S~~Q~~V~~T~~E~~V~~C~~A~~A~~T~~Y~~M~~M~~

GGGAATGAGTTGACCTTCCTAGATGATTCCATCTGCACGGGCACCTCCAGTGGAAATCAA
G~~N~~E~~L~~T~~F~~L~~D~~D~~S~~I~~C~~T~~G~~T~~S~~S~~G~~N~~Q~~

GTGAACCTCACTATCCAAGGACTGAGGGCCATGGACACGGGACTCTACATCTGCAAGGTG
V~~N~~L~~T~~I~~Q~~G~~L~~R~~A~~M~~D~~T~~G~~L~~Y~~I~~C~~K~~V~~

GAGCTCATGTACCCACCGCCATACTACGAGGGCATAGGCAACGGAACCCAGATTTATGTA
E~~L~~M~~Y~~P~~P~~P~~Y~~Y~~E~~G~~I~~G~~N~~G~~T~~Q~~I~~Y~~V~~

ATTGATCCAGAACCGTGCCCAGATTCTGATCAGGAGCCCAAATCTTCTGACAAAACTCAC
I~~D~~P~~E~~P~~C~~P~~D~~S~~D~~Q~~E~~P~~K~~S~~S~~D~~K~~T~~H~~

ACATCCCCACCGTCCCCAGCACCTGAACTCCTGGGGGGGATCGTCAGTCTTCCTCTTCCCC
T~~S~~P~~P~~S~~P~~A~~P~~E~~L~~L~~G~~G~~S~~S~~V~~F~~L~~F~~P~~

CCAAAACCCAAGGACACCCTCATGATCTCCCGGACCCCTGAGGTCACATGCGTGGTGGTG
P~~K~~P~~K~~D~~T~~L~~M~~I~~S~~R~~T~~P~~E~~V~~T~~C~~V~~V~~V~~

GACGTGAGCCACGAAGACCCTGAGGTCAAGTTCAACTGGTACGTGGACGGCGTGGAGGTG
D~~V~~S~~H~~E~~D~~P~~E~~V~~K~~F~~N~~W~~Y~~V~~D~~G~~V~~E~~V~~

CATAATGCCAAGACAAAGCCGCGGGAGGAGCAGTACAACAGCACGTACCGTGTGGTCAGC
H~~N~~A~~K~~T~~K~~P~~R~~E~~E~~Q~~Y~~N~~S~~T~~Y~~R~~V~~V~~S~~

GTCCTCACCGTCCTGCACCAGGACTGGCTGAATGGCAAGGAGTACAAGTGCAAGGTCTCC
V~~L~~T~~V~~L~~H~~Q~~D~~W~~L~~N~~G~~K~~E~~Y~~K~~C~~K~~V~~S~~

AACAAAGCCCTCCCAGCCCCCATCGAGAAAACCATCTCCAAAGCCAAAGGGCAGCCCCGA
N~~K~~A~~L~~P~~A~~P~~I~~E~~K~~T~~I~~S~~K~~A~~K~~G~~Q~~P~~R~~

GAACCACAGGTGTACACCCTGCCCCCATCCCGGGATGAGCTGACCAAGAACCAGGTCAGC
E~~P~~Q~~V~~Y~~T~~L~~P~~P~~S~~R~~D~~E~~L~~T~~K~~N~~Q~~V~~S~~

CTGACCTGCCTGGTCAAAGGCTTCTATCCCAGCGACATCGCCGTGGAGTGGGAGAGCAAT
L~~T~~C~~L~~V~~K~~G~~F~~Y~~P~~S~~D~~I~~A~~V~~E~~W~~E~~S~~N~~

GGGCAGCCGGAGAACAACTACAAGACCACGCCTCCCGTGCTGGACTCCGACGGCTCCTTC
G~~Q~~P~~E~~N~~N~~Y~~K~~T~~T~~P~~P~~V~~L~~D~~S~~D~~G~~S~~F~~

TTCCTCTACAGCAAGCTCACCGTGGACAAGAGCAGGTGGCAGCAGGGGAACGTCTTCTCA
F~~L~~Y~~S~~K~~L~~T~~V~~D~~K~~S~~R~~W~~Q~~Q~~G~~N~~V~~F~~S~~

TGCTCCGTGATGCATGAGGCTCTGCACAACCACTACACGCAGAAGAGCCTCTCCCTGTCT
C~~S~~V~~M~~H~~E~~A~~L~~H~~N~~H~~Y~~T~~Q~~K~~S~~L~~S~~L~~S~~

CCGGGTAAATGA~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
P~~G~~K~~*~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
```

FIG. 16

2052450.02

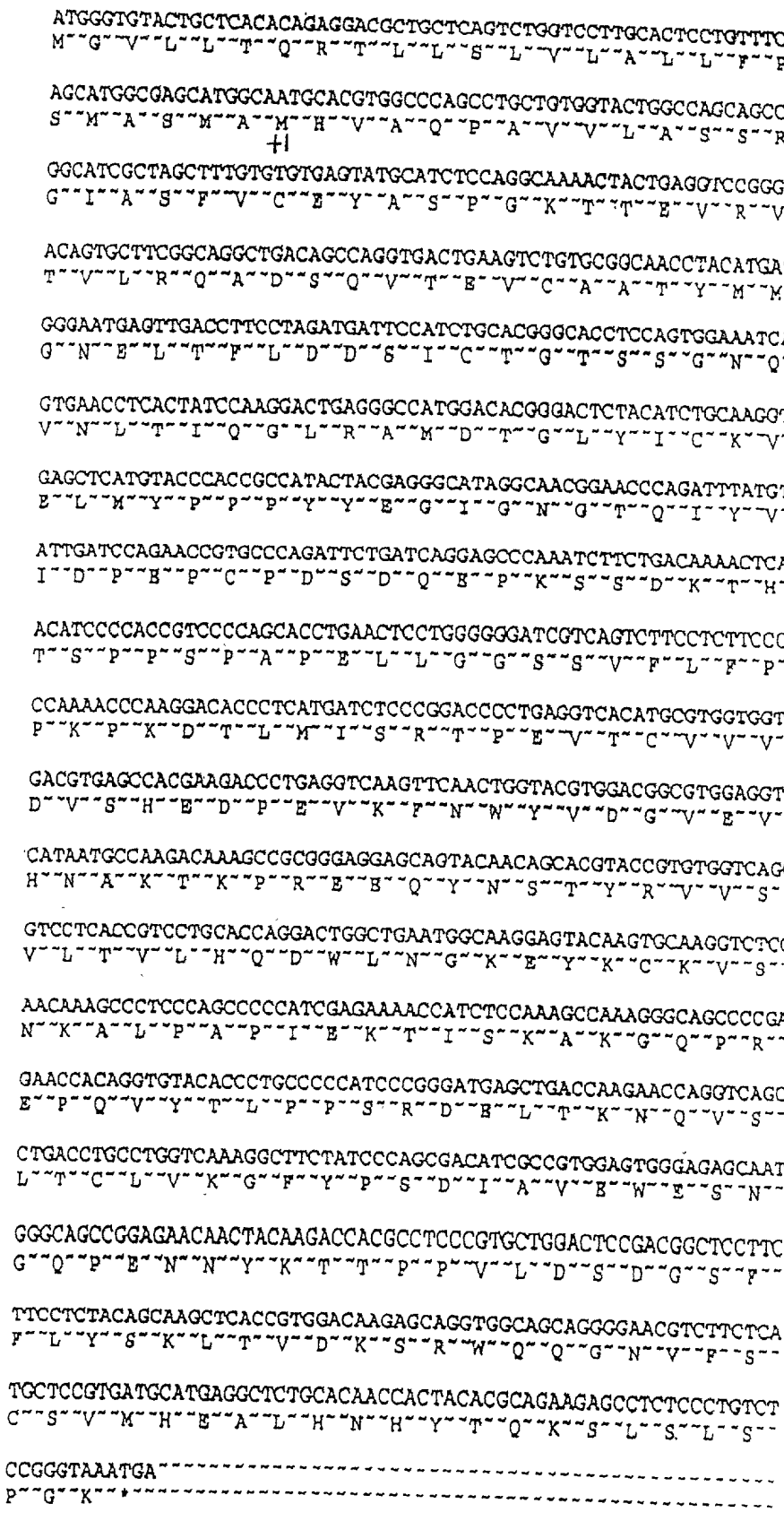


FIG. 17

EP 0 365 764 A1

```
ATGGGTGTACTGCTCACACAGAGGACGCTGCTCAGTCTGGTCCTTGCACTCCTGTTTCCA
M  G  V  L  L  T  Q  R  T  L  L  S  L  V  L  A  L  L  F  P

AGCATGGCGAGCATGGCAATGCACGTGGCCCAGCCTGCTGTGGTACTGGCCAGCAGCCGA
S  M  A  S  M  A  M  H  V  A  Q  P  A  V  V  L  A  S  S  R
                  +1
GGCATCGCTAGCTTTGTGTGTGAGTATGCATCTCCAGGCAAATGGACTGAGGTCCGGGTG
G  I  A  S  F  V  C  E  Y  A  S  P  G  K  W  T  E  V  R  V

ACAGTGCTTCGGCAGGCTGACAGCCAGGTGACTGAAGTCTGTGCGGCAACCTACATGATG
T  V  L  R  Q  A  D  S  Q  V  T  E  V  C  A  A  T  Y  M  M

GGGAATGAGTTGACCTTCCTAGATGATTCCATCTGCACGGGCACCTCCAGTGGAAATCAA
G  N  E  L  T  F  L  D  D  S  I  C  T  G  T  S  S  G  N  Q

GTGAACCTCACTATCCAAGGACTGAGGGCCATGGACACGGGACTCTACATCTGCAAGGTG
V  N  L  T  I  Q  G  L  R  A  M  D  T  G  L  Y  I  C  K  V

GAGCTCATGTACCCACCGCCATACTACGAGGGCATAGGCAACGGAACCCAGATTTATGTA
E  L  M  Y  P  P  Y  Y  E  G  I  G  N  G  T  Q  I  Y  V

ATTGATCCAGAACCGTGCCCAGATTCTGATCAGGAGCCCAAATCTTCTGACAAAACTCAC
I  D  P  E  P  C  P  D  S  D  Q  E  P  K  S  S  D  K  T  H

ACATCCCCACCGTCCCCAGCACCTGAACTCCTGGGGGGATCGTCAGTCTTCCTCTTCCCC
T  S  P  P  S  P  A  P  E  L  L  G  G  S  S  V  F  L  F  P

CCAAAACCCAAGGACACCCTCATGATCTCCCGGACCCCTGAGGTCACATGCGTGGTGGTG
P  K  P  K  D  T  L  M  I  S  R  T  P  E  V  T  C  V  V  V

GACGTGAGCCACGAAGACCCTGAGGTCAAGTTCAACTGGTACGTGGACGGCGTGGAGGTG
D  V  S  H  E  D  P  E  V  K  F  N  W  Y  V  D  G  V  E  V

CATAATGCCAAGACAAAGCCGCGGGAGGAGCAGTACAACAGCACGTACCGTGTGGTCAGC
H  N  A  K  T  K  P  R  E  E  Q  Y  N  S  T  Y  R  V  V  S

GTCCTCACCGTCCTGCACCAGGACTGGCTGAATGGCAAGGAGTACAAGTGCAAGGTCTCC
V  L  T  V  L  H  Q  D  W  L  N  G  K  E  Y  K  C  K  V  S

AACAAAGCCCTCCCAGCCCCCATCGAGAAAACCATCTCCAAAGCCAAAGGGCAGCCCCGA
N  K  A  L  P  A  P  I  E  K  T  I  S  K  A  K  G  Q  P  R

GAACCACAGGTGTACACCCTGCCCCCATCCCGGGATGAGCTGACCAAGAACCAGGTCAGC
E  P  Q  V  Y  T  L  P  P  S  R  D  E  L  T  K  N  Q  V  S

CTGACCTGCCTGGTCAAAGGCTTCTATCCCAGCGACATCGCCGTGGAGTGGGAGAGCAAT
L  T  C  L  V  K  G  F  Y  P  S  D  I  A  V  E  W  E  S  N

GGGCAGCCGGAGAACAACTACAAGACCACGCCTCCCGTGCTGGACTCCGACGGCTCCTTC
G  Q  P  E  N  N  Y  K  T  T  P  P  V  L  D  S  D  G  S  F

TTCCTCTACAGCAAGCTCACCGTGGACAAGAGCAGGTGGCAGCAGGGGAACGTCTTCTCA
F  L  Y  S  K  L  T  V  D  K  S  R  W  Q  Q  G  N  V  F  S

TGCTCCGTGATGCATGAGGCTCTGCACAACCACTACACGCAGAAGAGCCTCTCCCTGTCT
C  S  V  M  H  E  A  L  H  N  H  Y  T  Q  K  S  L  S  L  S

CCGGGTAAATGA*----------*----------*----------*----------*----
P  G  K  *
```

FIG. 18

ONCOSTATIN M SIGNAL PEPTIDE

```
M   G   V   L   L   T   Q   R   T   L   L   S   L   V   L
ATG GGT GTA CTG CTC ACA CAG AGG ACG CTG CTC AGT CTG GTC CTT   45

                                        -1  +1
A   L   L   F   P   S   M   A   S   M   A   M   H   V   A
GCA CTC CTG TTT CCA AGC ATG GCG AGC ATG GCA ATG CAC GTG GCC   90

Q   P   A   V   V   L   A   S   S   R   G   I   A   S   F
CAG CCT GCT GTG GTA CTG GCC AGC AGC CGA GGC ATC GCC AGC TTT  135

V   C   E   Y   A   S   P   G   K   A   T   E   V   R   V
GTG TGT GAG TAT GCA TCT CCA GGC AAA GCC ACT GAG GTC CGG GTG  180

T   V   L   R   Q   A   D   S   Q   V   T   E   V   C   A
ACA GTG CTT CGG CAG GCT GAC AGC CAG GTG ACT GAA GTC TGT GCG  225

A   T   Y   M   M   G   N   E   L   T   F   L   D   D   S
GCA ACC TAC ATG ATG GGG AAT GAG TTG ACC TTC CTA GAT GAT TCC  270

I   C   T   G   T   S   S   G   N   Q   V   N   L   T   I
ATC TGC ACG GGC ACC TCC AGT GGA AAT CAA GTG AAC CTC ACT ATC  315

Q   G   L   R   A   M   D   T   G   L   Y   I   C   K   V
CAA GGA CTG AGG GCC ATG GAC ACG GGA CTC TAC ATC TGC AAG GTG  360

                                        GLYCOSYLATION SITE
E   L   M   Y   P   P   P   Y   Y   L   G   I   G   N   G
GAG CTC ATG TAC CCA CCG CCA TAC TAC CTG GGC ATA GGC AAC GGA  405

T   Q   I   Y   V   I   D   P   E   P   C   P   D   S   D
ACC CAG ATT TAT GTA ATT GAT CCA GAA CCG TGC CCA GAT TCT GAC  450

F   L   L   W   I   L   A   A   V   S   S   G   L   F   F
TTC CTC CTC TGG ATC CTT GCA GCA GTT AGT TCG GGG TTG TTT TTT  495

Y   S   F   L   L   T   A   V   S   L   S   K   M   L   K
TAT AGC TTT CTC CTC ACA GCT GTT TCT TTG AGC AAA ATG CTA AAG  540

K   R   S   P   L   T   T   G   V   Y   V   K   M   P   P
AAA AGA AGC CCT CTT ACA ACA GGG GTC TAT GTG AAA ATG CCC CCA  585

T   E   P   E   C   E   K   Q   F   Q   P   Y   F   I   P
ACA GAG CCA GAA TGT GAA AAG CAA TTT CAG CCT TAT TTT ATT CCC  630

I   N
ATC AAT                                                     636
```

FIG. 19

2052468 050207

```
ATGGGTGTACTGCTCACACAGAGGACGCTGCTCAGTCTGGTCCTTGCACTCCTGTTTCCA      -19
M~~G~~V~~L~~L~~T~~Q~~R~~T~~L~~L~~S~~L~~V~~L~~A~~L~~L~~F~~P~~      -7

AGCATGGCGAGCATGGCAATGCACGTGGCCCAGCCTGCTGTGGTACTGGCCAGCAGCCGA      +42
S~~M~~A~~S~~M~~A~~M~~H~~V~~A~~Q~~P~~A~~V~~V~~L~~A~~S~~S~~R~~      +14
                  +1

GGCATCGCTAGCTTTGTGTGTGAGTATGCATCTCCAGGCAAAGCCACTGAGGTCCGGGTG      +102
G~~I~~A~~S~~F~~V~~C~~E~~Y~~A~~S~~P~~G~~K~~A~~T~~E~~V~~R~~V~~      +34

ACAGTGCTTCGGCAGGCTGACAGCCAGGTGACTGAAGTCTGTGCGGCAACCTACATGATG      +162
T~~V~~L~~R~~Q~~A~~D~~S~~Q~~V~~T~~E~~V~~C~~A~~A~~T~~Y~~M~~M~~      +54

GGGAATGAGTTGACCTTCCTAGATGATTCCATCTGCACGGGCACCTCCAGTGGAAATCAA      +222
G~~N~~E~~L~~T~~F~~L~~D~~D~~S~~I~~C~~T~~G~~T~~S~~S~~G~~N~~Q~~      +74

GTGAACCTCACTATCCAAGGACTGAGGGCCATGGACACGGGACTCTACATCTGCAAGGTG      +282
V~~N~~L~~T~~I~~Q~~G~~L~~R~~A~~M~~D~~T~~G~~L~~Y~~I~~C~~K~~V~~      +94

GAGCTCATGTACCCACCGCCATACTACCTGGGCATAGGCAACGGAACCCAGATTTATGTA      +342
E~~L~~M~~Y~~P~~P~~P~~Y~~Y~~L~~G~~I~~G~~N~~G~~T~~Q~~I~~Y~~V~~      +114

ATTGATCCAGAACCGTGCCCAGATTCTGATCAGGAGCCCAAATCTTCTGACAAAACTCAC      +402
I~~D~~P~~E~~P~~C~~P~~D~~S~~D~~Q~~E~~P~~K~~S~~S~~D~~K~~T~~H~~      +134

ACATCCCCACCGTCCCCAGCACCTGAACTCCTGGGTGGATCGTCAGTCTTCCTCTTCCCC      +462
T~~S~~P~~P~~S~~P~~A~~P~~E~~L~~L~~G~~G~~S~~S~~V~~F~~L~~F~~P~~      +154

CCAAAACCCAAGGACACCCTCATGATCTCCCGGACCCCTGAGGTCACATGCGTGGTGGTG      +522
P~~K~~P~~K~~D~~T~~L~~M~~I~~S~~R~~T~~P~~E~~V~~T~~C~~V~~V~~V~~      +174

GACGTGAGCCACGAAGACCCTGAGGTCAAGTTCAACTGGTACGTGGACGGCGTGGAGGTG      +582
D~~V~~S~~H~~E~~D~~P~~E~~V~~K~~F~~N~~W~~Y~~V~~D~~G~~V~~E~~V~~      +194

CATAATGCCAAGACAAAGCCGCGGGAGGAGCAGTACAACAGCACGTACCGGGTGGTCAGC      +642
H~~N~~A~~K~~T~~K~~P~~R~~E~~E~~Q~~Y~~N~~S~~T~~Y~~R~~V~~V~~S~~      +214

GTCCTCACCGTCCTGCACCAGGACTGGCTGAATGGCAAGGAGTACAAGTGCAAGGTCTCC      +702
V~~L~~T~~V~~L~~H~~Q~~D~~W~~L~~N~~G~~K~~E~~Y~~K~~C~~K~~V~~S~~      +234

AACAAAGCCCTCCCAGCCCCCATCGAGAAAACCATCTCCAAAGCCAAAGGGCAGCCCCGA      +762
N~~K~~A~~L~~P~~A~~P~~I~~E~~K~~T~~I~~S~~K~~A~~K~~G~~Q~~P~~R~~      +254

GAACCACAGGTGTACACCCTGCCCCCATCCCGGGATGAGCTGACCAAGAACCAGGTCAGC      +822
E~~P~~Q~~V~~Y~~T~~L~~P~~P~~S~~R~~D~~E~~L~~T~~K~~N~~Q~~V~~S~~      +274

CTGACCTGCCTGGTCAAAGGCTTCTATCCCAGCGACATCGCCGTGGAGTGGGAGAGCAAT      +882
L~~T~~C~~L~~V~~K~~G~~F~~Y~~P~~S~~D~~I~~A~~V~~E~~W~~E~~S~~N~~      +294

GGGCAGCCGGAGAACAACTACAAGACCACGCCTCCCGTGCTGGACTCCGACGGCTCCTTC      +942
G~~Q~~P~~E~~N~~N~~Y~~K~~T~~T~~P~~P~~V~~L~~D~~S~~D~~G~~S~~F~~      +314

TTCCTCTACAGCAAGCTCACCGTGGACAAGAGCAGGTGGCAGCAGGGGAACGTCTTCTCA      +1002
F~~L~~Y~~S~~K~~L~~T~~V~~D~~K~~S~~R~~W~~Q~~Q~~G~~N~~V~~F~~S~~      +334

TGCTCCGTGATGCATGAGGCTCTGCACAACCACTACACGCAGAAGAGCCTCTCCCTGTCT      +1062
C~~S~~V~~M~~H~~E~~A~~L~~H~~N~~H~~Y~~T~~Q~~K~~S~~L~~S~~L~~S~~      +354

CCGGGTAAATGA
P~~G~~K~~*
```

FIG. 20

5,955,307

FIG. 21 A

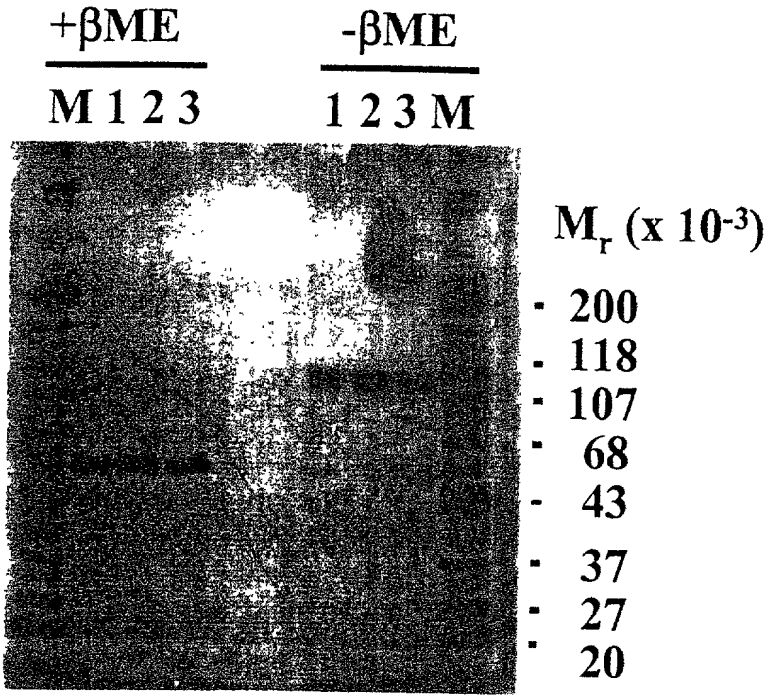


FIG. 21 B

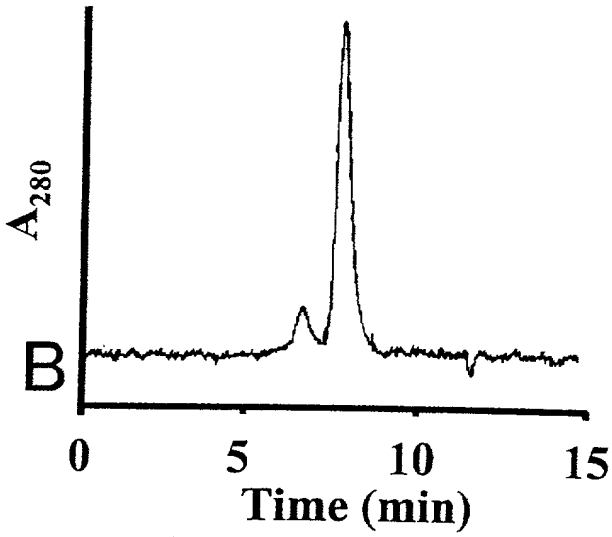
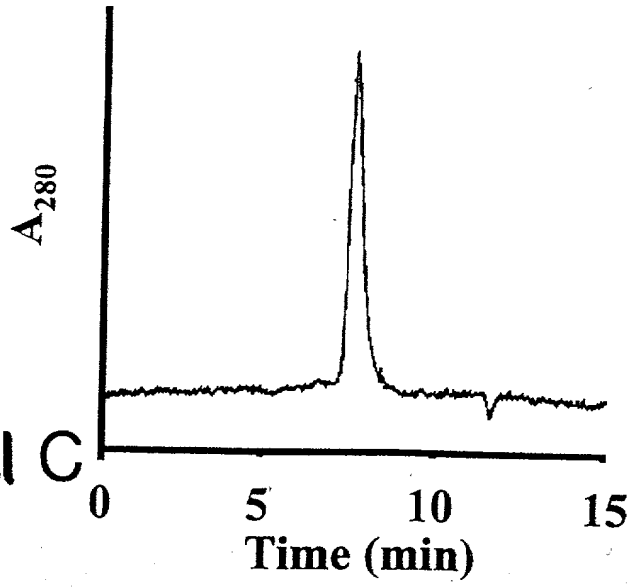


FIG. 21 C



20527.0 8824.5007

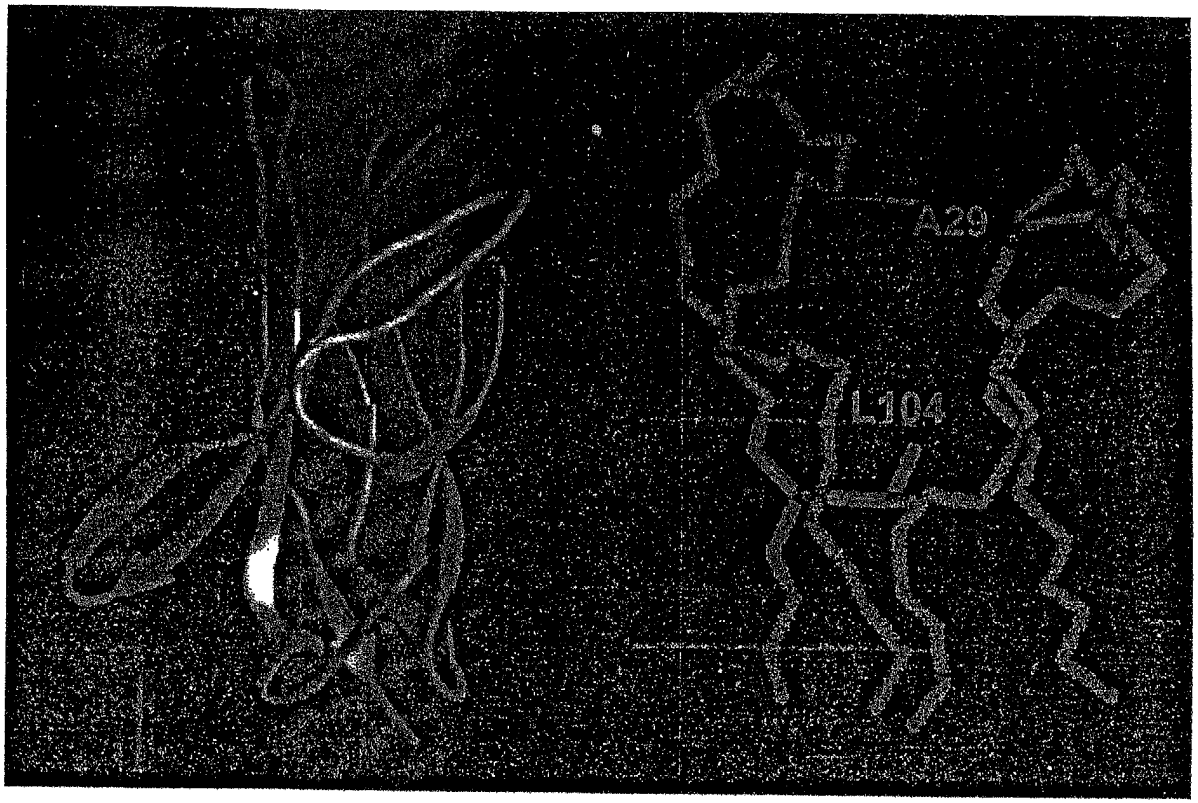


FIG. 22

2852707 8624501

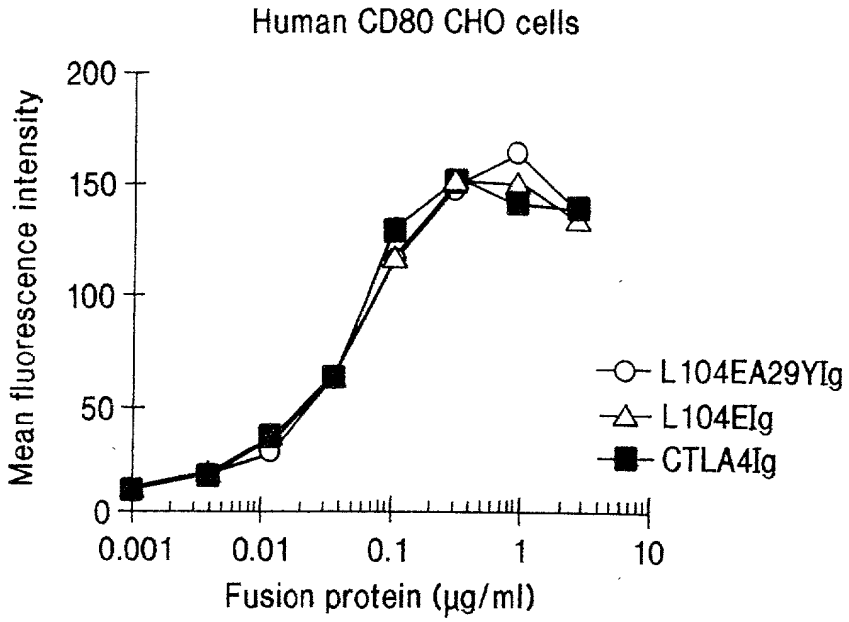


FIG. 23 A

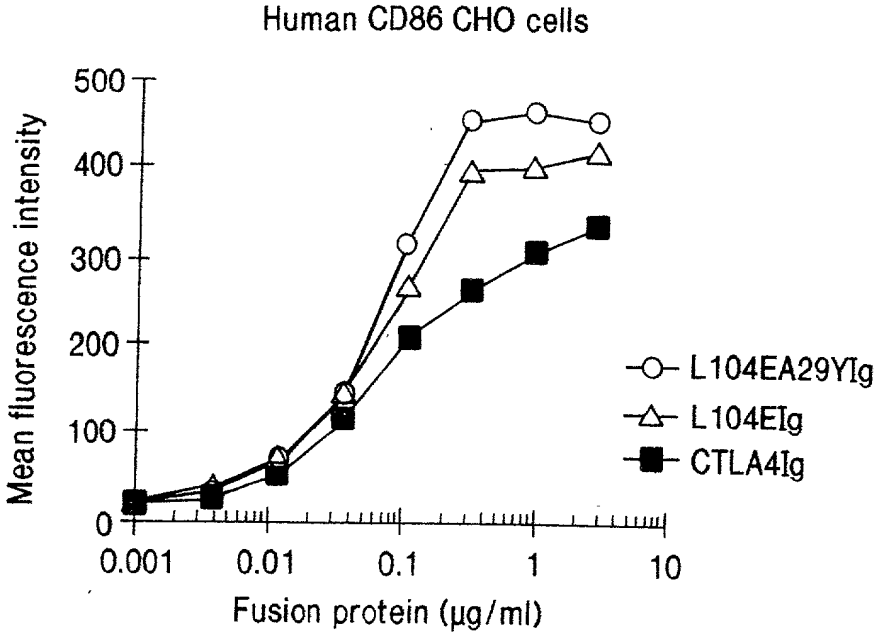


FIG. 23 B

2852716 062507

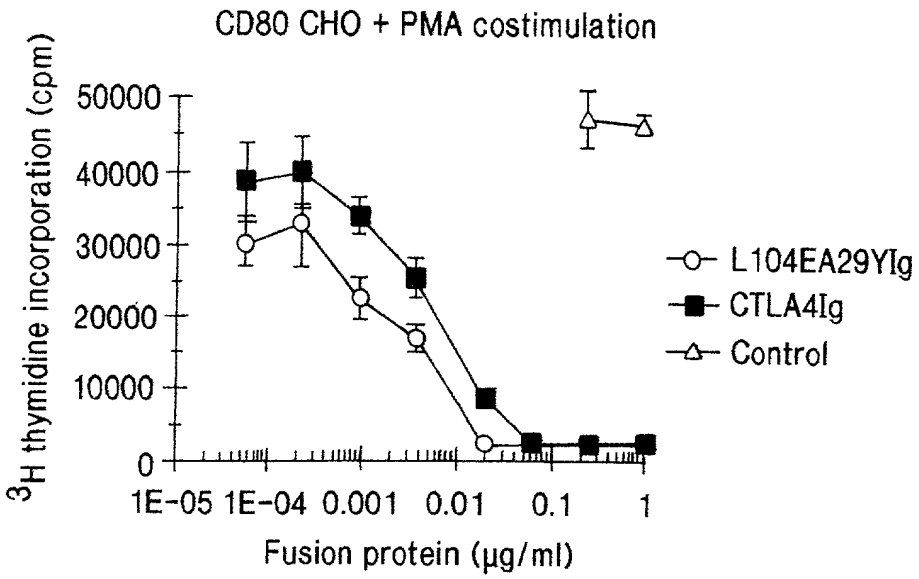


FIG. 24 A

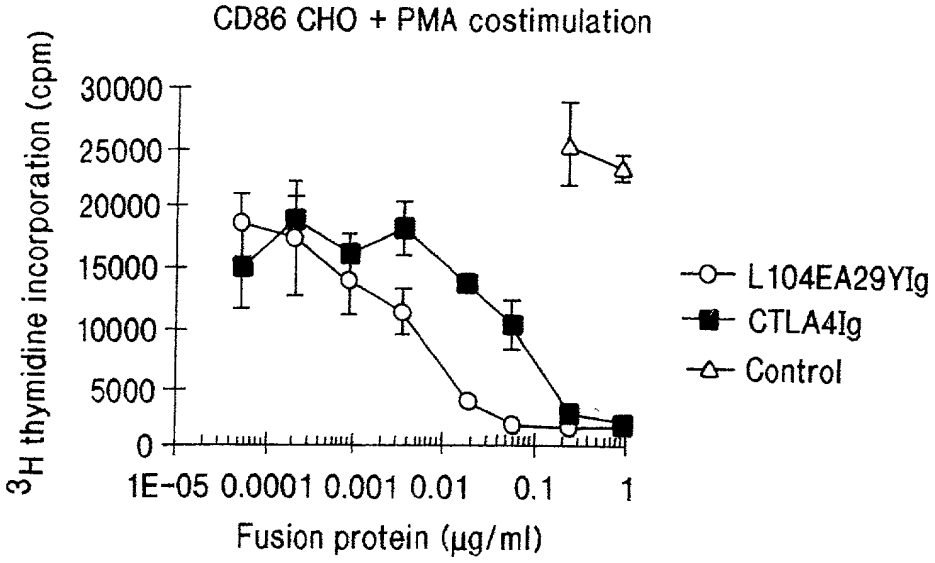


FIG. 24 B

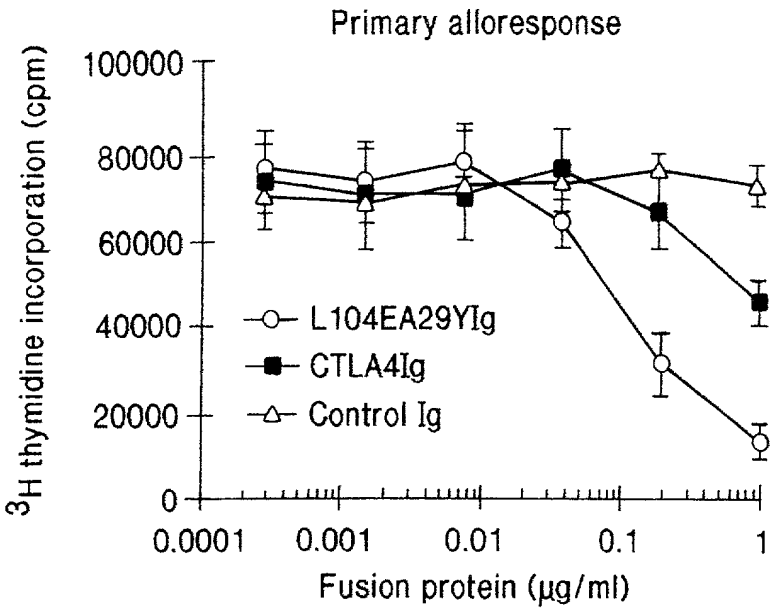


FIG. 25 A

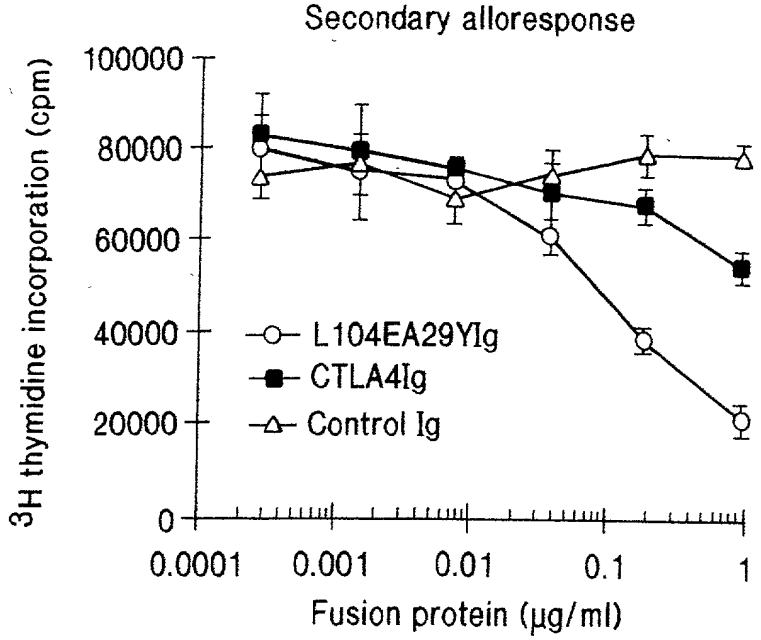


FIG. 25 B

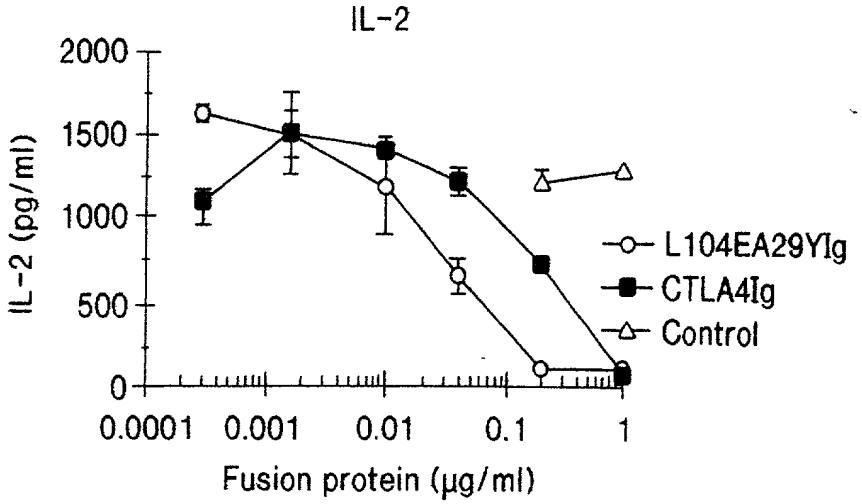


FIG. 26 A

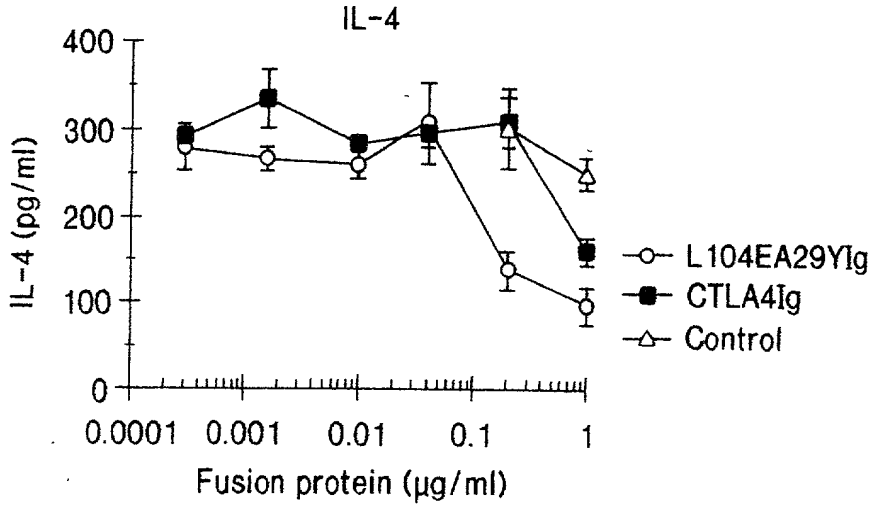


FIG. 26 B

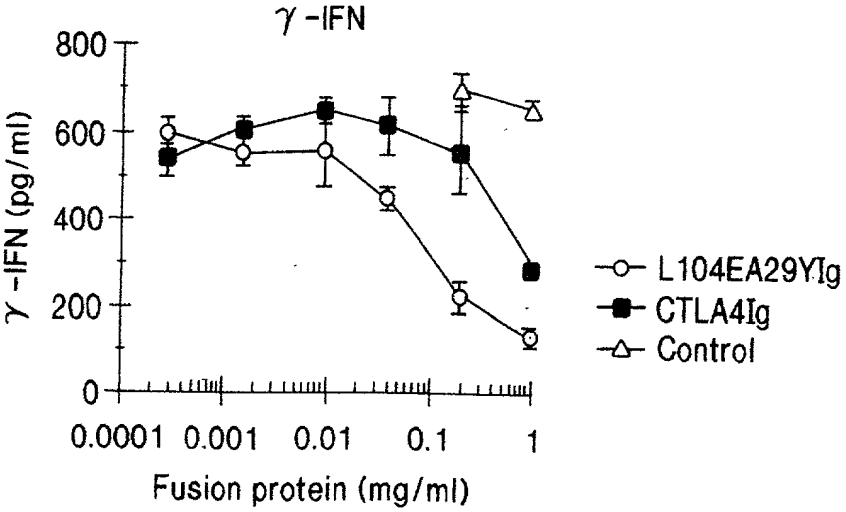


FIG. 26 C

20527.6362/5017

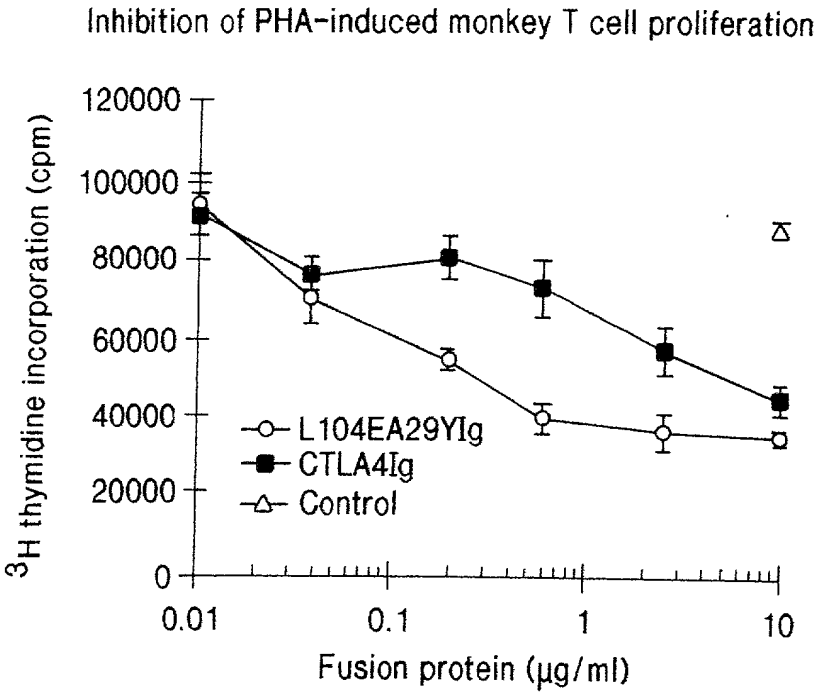


FIG. 27

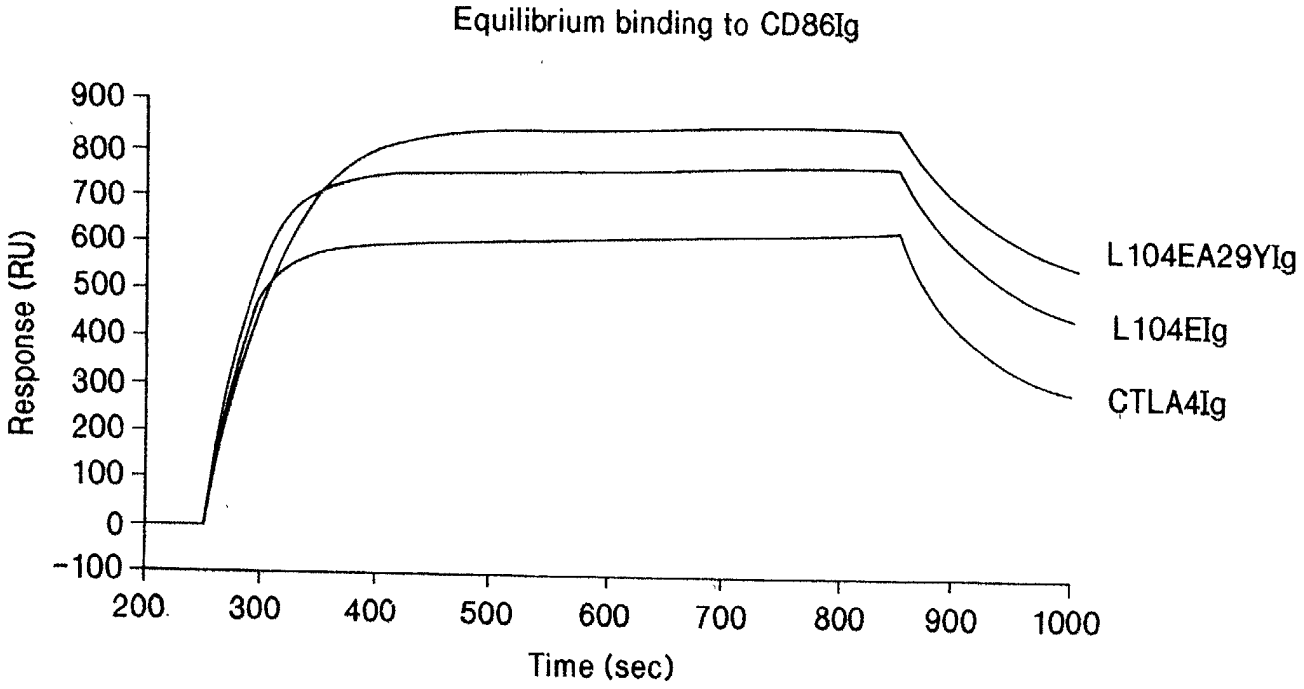

Equilibrium binding to CD86Ig
Response (RU)
900
800
700
600
500
400
300
200
100
0
-100
200
300
400
500
600
700
800
900
1000
Time (sec)
L104EA29YIg
L104EIg
CTLA4Ig

FIG. 28

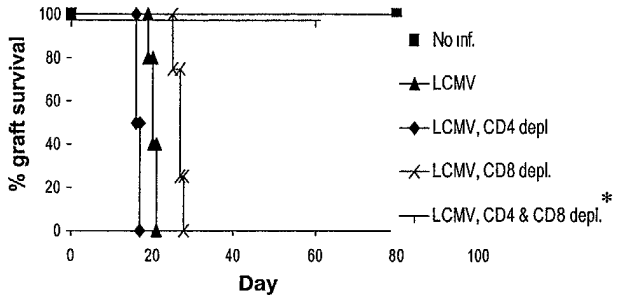

100
80
60
40
20
0
% graft survival
0
20
40
60
80
100
Day
No inf.
LCMV
LCMV, CD4 depl
LCMV, CD8 depl.
LCMV, CD4 & CD8 depl.*

Figure 29

20520T-882500T

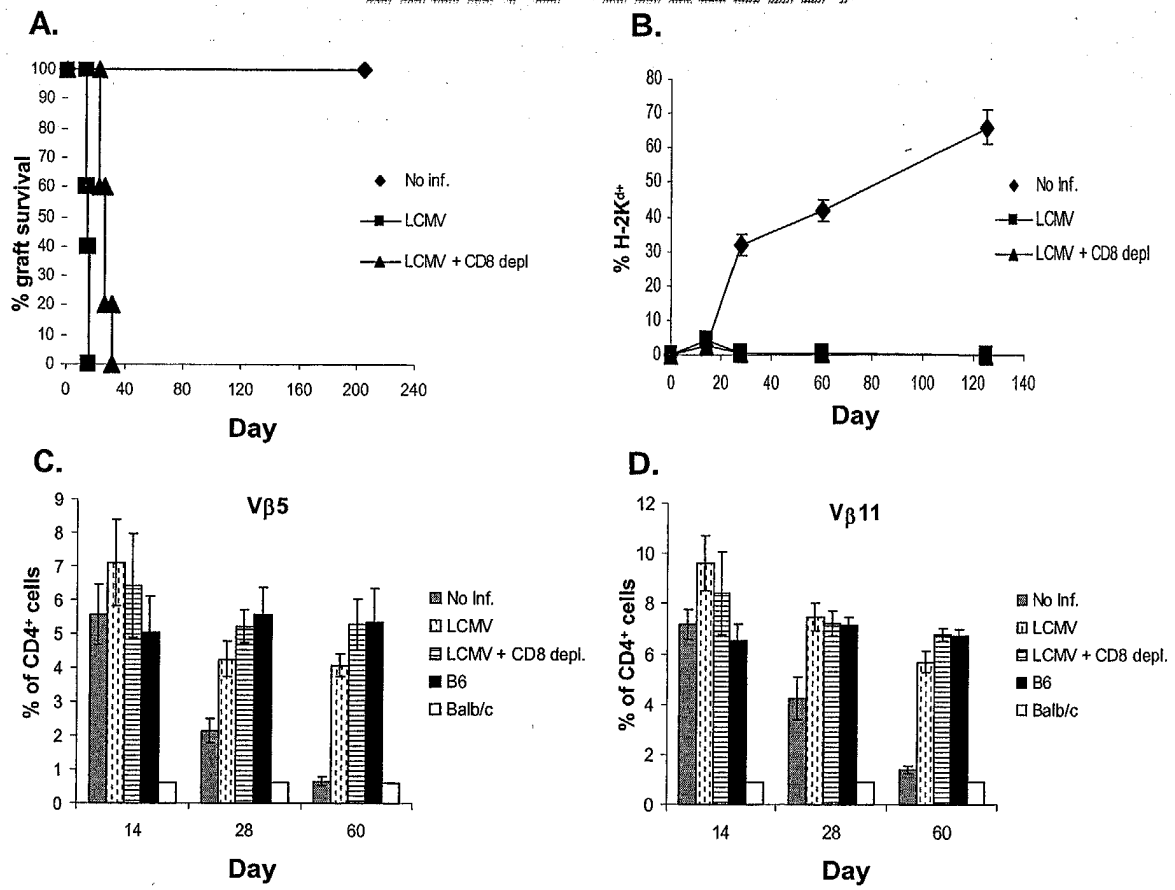


Figure 30

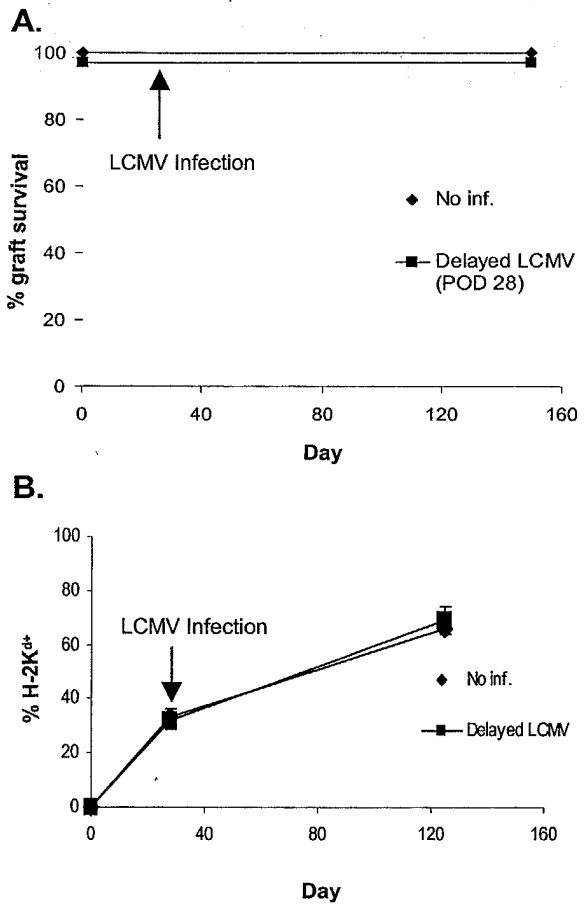

A.
100
80
60
40
20
0
% graft survival
LCMV Infection
No inf.
Delayed LCMV
(POD 28)
0
40
80
120
160
Day
B.
100
80
60
40
20
0
% H-2K^{d+}
LCMV Infection
No inf.
Delayed LCMV
0
40
80
120
160
Day

Figure 31

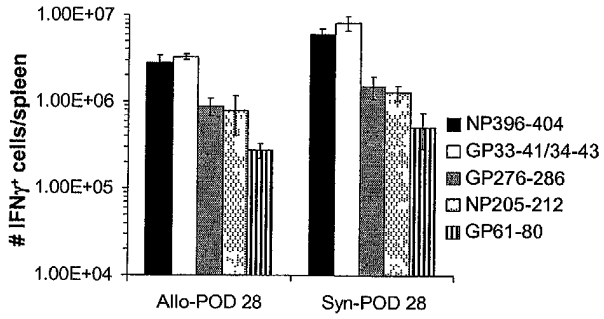

1.00E+07
1.00E+06
1.00E+05
1.00E+04
IFNγ+ cells/spleen
Allo-POD 28
Syn-POD 28
NP396-404
GP33-41/34-43
GP276-286
NP205-212
GP61-80

Figure 32

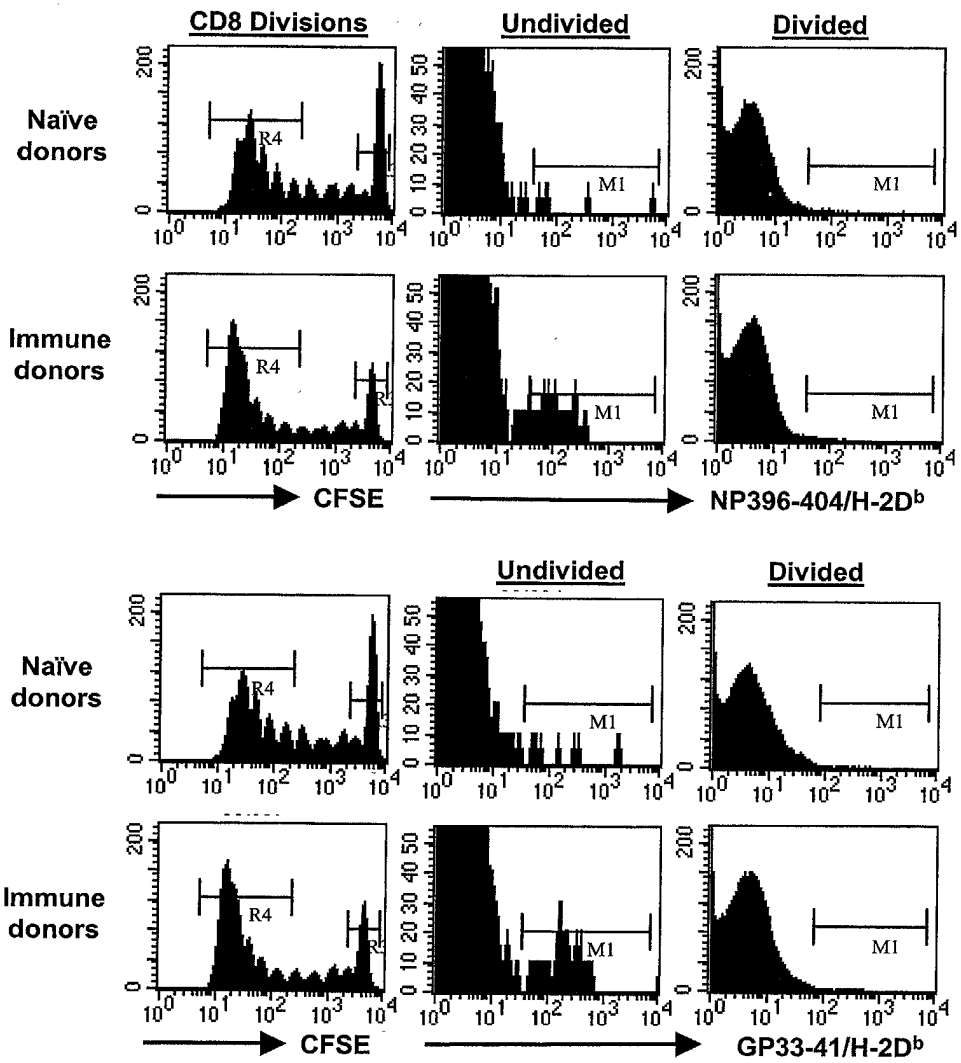

CD8 Divisions
Undivided
Divided
Naïve donors
Immune donors
R4
M1
CFSE
NP396-404/H-2Db
Undivided
Divided
Naïve donors
Immune donors
R4
M1
CFSE
GP33-41/H-2Db

Figure 33

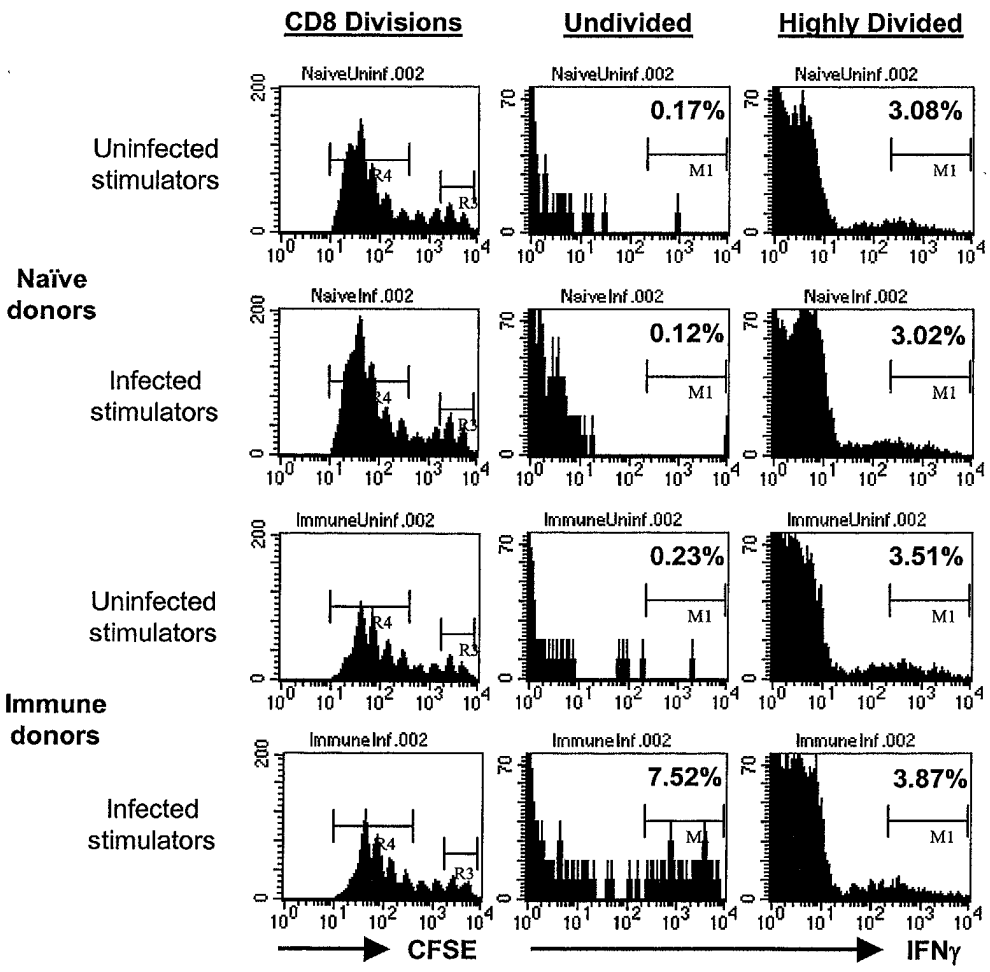

CD8 Divisions
Undivided
Highly Divided
Uninfected stimulators
Naïve donors
Infected stimulators
Uninfected stimulators
Immune donors
Infected stimulators
NaiveUninf.002
NaiveInf.002
ImmuneUninf.002
ImmuneInf.002
0.17%
3.08%
0.12%
3.02%
0.23%
3.51%
7.52%
3.87%
R4
R3
M1
CFSE
IFNγ

Figure 34

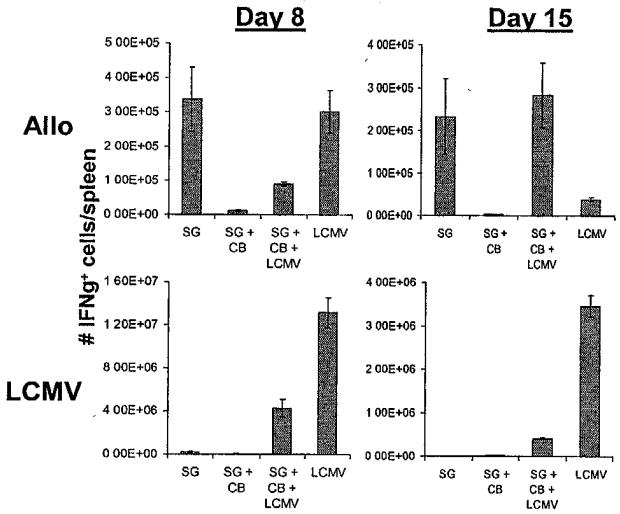

Day 8
Day 15
Allo
LCMV
IFNg+ cells/spleen
5 00E+05
4 00E+05
3 00E+05
2 00E+05
1 00E+05
0 00E+00
1 60E+07
1 20E+07
8 00E+06
4 00E+06
4 00E+06
3 00E+06
2 00E+06
1 00E+06
SG
SG + CB
SG + CB + LCMV
LCMV

Figure 35

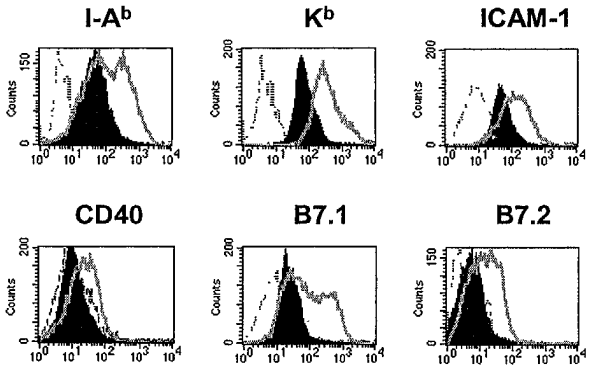


Figure 36